does occur. I obtained my specimens in May and June, and they bore numerous gonophores.

In studying *Wrightia* and the allied genera one cannot help noticing their resemblance to Calyptoblasts. The family Bougainvilliidæ, to which they belong, is practically alone among Gymnoblastea in possessing a single verticil of filiform tentacles surrounding a conical hypostome. All the Calyptoblasts have this conical hypostome and single verticil of filiform tentacles. Further, many of the genera of Bougainvilliidæ have quite a distinct protective cup for the hydranth, resembling greatly the hydrotheca of the Calyptoblast. Indeed, were it not for the fact that these genera are classified with the Gymnoblastea, their protective cups would receive the name of hydrothecæ.

These facts point to the conclusion that a close relationship exists between the family Bougainvilliidæ and the suborder Calyptoblastea. The Bougainvilliidæ, perhaps, form a transition-stage between the suborders Gymnoblastea and Calyptoblastea.

XI.—*On the Generic Position of Benson's* Helix hyba *and the Similarity of its Anatomy to that of* Khasiella vidua, *W. T. Blanford.* By Lt.-Colonel H. H. Godwin-Austen, F.R.S. &c.

Ever since the discovery of this species about 1860 it has been impossible to locate it in any Indian genus without considerable doubt. It is apparently very rare. I have never come across it in the field, and I do not think it is to be found in many collections. I am informed by Mr. S. F. Harmer, of the University Museum of Zoology, Cambridge, that two specimens (Benson's types) are in the MacAndrew collection. Fortunately I have recently discovered two specimens among some other species preserved in spirit by Mr. W. Theobald, marked "Chamba," a small State in the N.W. Himalaya, S.E. of Kashmir Territory. The one from which the subjoined description was taken was in a very good state of preservation. All we knew with any certainty was that it belonged to the Zonitidæ, Mr. Theobald having noted the presence of the mucous gland at the extremity of the foot at the time of capture.

Mr. Benson described the shell in the Ann. & Mag. Nat. Hist. ser. 3, vol. vii. (Feb. 1861), in his usual excellent way, and goes on to say:—

"This interesting form, discovered in the mountains near the Bari Do-āb by J. Doyle Smithe, Esq., F.G.S., of Madhopore, and kindly communicated to me by his brother, the Rev. Fred. Smithe, of Churchdown, approaches more nearly to the Nilgherry *H. Guerini*, Pfr., than to any Himalayan species. It is notable for its shorter vaulted spire, sharp keel, rather open umbilicus, and sculpture. In one imperfect specimen, with a higher and more rounded hive-shaped spire, the keel of the penultimate whorl overhangs the anterior part of the last whorl."

We now know that *H. Guerini*, Pfr., is a *Thysanota* in a very distinct family of Land-Mollusca. The overhanging of the keel of the whorl I note in these shells, and it produces the appearance of a thread running with the suture. Theobald records the finding of a large variety of this species at "Aijas" ("Ajjas" on the map of Kashmir, 2 m.=1 inch), in the hills east of the Walar Lake, Kashmir, measuring $17\frac{1}{4} \times 16\frac{3}{4} \times 10$ mm. This shell appears to have been lost.

The specimen Benson described measured: diam. major 14 mm., minor 13, axis 7; the one I now figure: $12 \times 11{\cdot}5 \times 5\frac{1}{2}$ respectively.

On removing the shell the visceral sac is pale-coloured, sparsely and finely spotted with black on the line of the rectum. The foot is short and very narrow, indistinctly divided, dark grey; a distinct mucous gland overhung by a blunt lobe, peripodial grooves, and a well-marked fringed margin to the foot. There is a small but distinct and serrated right shell-lobe, which would spread further in life; the left is a marginal band on the edge of the peristome. The generative organs were of great interest as they were unfolded. The amatorial organ is of the usual form; the penis retractor muscle given off from a distinctly coiled cæcum at the head of the main penis-sheath. There is a long epiphallus thence to the junction of the vas deferens, with a long kalc-sac adjacent in which a spermatophore had been developing. The spermatheca is very long, gradually enlarging to the distal end, and contained three spermatophores; these are of the type I have described in various species of *Macrochlamys*, *Austenia*, &c. The flume had no large spines, but very minute ones could be detected on the edges of it. This being a single specimen, which I have mounted in glycerine-jelly, I did not like to destroy the sac of the spermatheca to get a spermatophore out entire. In separating out the lengthened genitalia of a close-wound shell such as this is, it is not easy to do so without occasionally something breaking away. The oviduct is peculiar, very straight up to the albumen-gland,

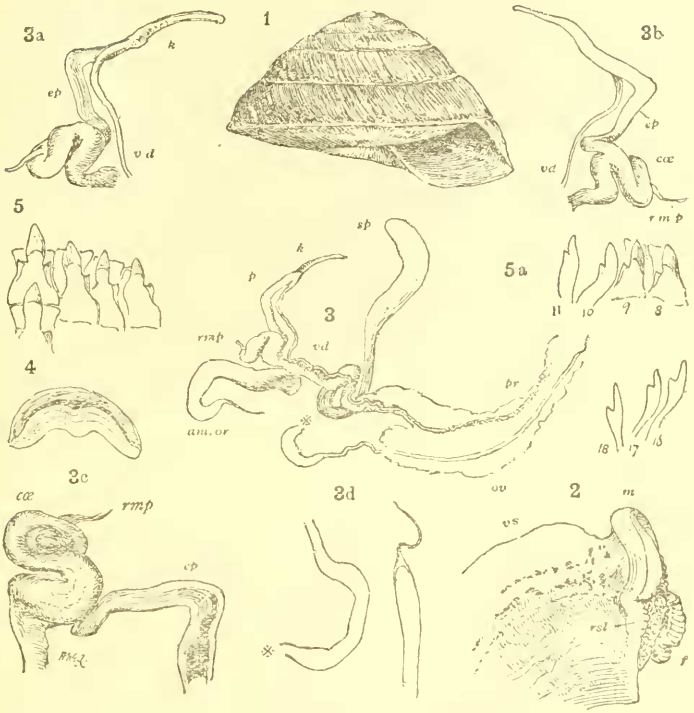

Fig. 1.—*Khasiella hyba*, Bs.; shell. × 4·8.
Fig. 2.—Side view of mantle-edge from right side, showing the obscure right shell-lobe, foot, &c. × 8.
Fig. 3.—Genitalia. × 4·5.
Figs. 3 *a*, 3 *b*.—The penis, as seen from two opposite sides, to show the coiled cæcum and position of the retractor muscle attachment, the kalc-sac or flagellum, &c. × 8.
Fig. 3 *c*.—A portion of same organ more enlarged, slightly pressed between two glass slips and viewed by transmitted light, to show the close-coiled cæcum.; the dark portion is part of a spermatophore. × 12.
Fig. 3 *d*.—Terminal end and distal end of an organ not located in the genitalia and with which it may have no connexion. × 12.
Fig. 4.—Jaw. × 24.
Fig. 5.—Central tooth and three admedian teeth of the radula. × 368.
Fig. 5 *a*.—Eighth to eleventh admedian and sixteenth to eighteenth lateral teeth.

ep. Epiphallus.
k. Kalc-sac or flagellum.
vd. Vas deferens.
cæ. Cæcum.
p. Penis.
rmp. Retractor muscle of penis.
am.or. Amatorial organ.
pr. Prostate.
rsl. Right shell-lobe.
f. Foot.
vs. Visceral sac.
ov. Oviduct.

so was the line of the prostate; but lying nearly parallel to this I observed a long narrow ribbon—no doubt a duct—lying on the surface of the jelly-like oviduct, of a hard nature and ochraceous in colour, clearly pointed and with a fine retractor muscle, while floating free among the parts of the genitalia was a similar-sized duct with a swollen open end, where it had evidently broken away. This may be an accessory gland of some kind given off from the free oviduct or base of the spermatheca. It might very easily have been set down as a spermatophore, but fortunately in this case the spermatophore of this species is before me, and narrows its possible function and connexion with the genitalia considerably. We must wait for more material to clear up this point.

The second specimen, the shell of which is here figured (p. 57), I do not like to destroy, as the species would appear to be so rare.

The jaw is strong and solid, slightly arched into a central projection.

The radula has the formula

$$\begin{matrix} 18 \,.\, 2 \,.\, 9 \,.\, 1 \,.\, 9 \,.\, 2 \,.\, 18 \\ 29 \,.\, 1 \,.\, 29. \end{matrix}$$

The teeth are of the usual form in so many genera of the Zonitidæ, the laterals being bicuspid, with the outer cusp below the inner, becoming very small on the margin.

On comparing these anatomical details with those of other Indian species, I find there is a remarkable similarity to those of the genus *Khasiella* (Godwin-Austen, Moll. Ind. vol. ii. p. 129, pl. c. figs. 1–5 *d*) as seen in the type species *vidua*, W. T. Blanf. There is (1) the same small obscure right shell-lobe; (2) same form of foot and mucous gland; (3) the jaw and radula are precisely alike; (4) the generative organs differ in no appreciable way, merely that the short free cæcum retractoris penis of *vidua* becomes a close-wound coil in *hyba*, and is thus similar to the same part in *Macrochlamys indica*.

It is extremely interesting to find such close resemblance in the anatomy of two land-molluscs with such very distinct forms of shell as presented in *hyba* and *indica*; differing so widely, conchologically they would take their place in separate genera. The shells of *vidua* and *hyba* also present at first sight considerable differences, but the variation becomes less apparent when *hyba* is compared with the sharply keeled species of *Khasiella*, such as *climacterica*, Bens., and *Austeni*, W. T. Blanf.

I think I am right in considering *H. hyba* by its anatomy to

belong to the genus *Khasiella*, with these shell-characters :— Openly umbilicated; sharply keeled; spire very conoid, with sides and apex very convex.

Nore, Godalming,
5th June, 1907.

XII.—*Descriptions and Records of Bees.*—XV.

By T. D. A. Cockerell, University of Colorado.

Triepeolus Norœ, sp. n.

♀.—Length about 8½ mm.

Black, with the usual markings only slightly yellowish; hair on middle of face pure white; legs clear red, spurs of middle and hind legs black; no red colour on thorax; tegulæ apricot-colour; scutellum low, obscurely bilobed, the lateral teeth black and short. Clypeus shining, with many very minute punctures and a few large ones; mandibles red except at base and apex; labrum black, a little reddish at sides; first three antennal joints and base of fourth ferruginous; sides of vertex with large well-separated punctures on a shining ground; mesothorax exceedingly densely punctured, the two median stripes of hair short, not attaining the anterior margin; pleura hairy in front and with a large transverse patch of hair; lower part of pleura densely punctured, but at one place a little of the shining surface shows; dark transverse mark on first abdominal segment essentially as in *T. occidentalis*, but the posterior band interrupted; segments 2 to 4 with even entire bands, that on 2 with lateral processes directed forwards so as to make with the band an angle of about 45°; sides of fifth segment with white tomentum; last ventral segment normal.

In nearly all respects exactly like a small edition of *T. occidentalis*, but the hair of the abdomen is less yellow, the pygidial patch is narrower, and the scutellar teeth are less developed. In size and general appearance it closely resembles *T. callopus*, Ckll. The colour of the spurs will readily separate it from *T. Hopkinsi*.

Hab. Mesilla Park, New Mexico, at flowers of *Sphæralcea lobata*, Wooton, May 16 (*Miss Nora Newberry*).

Triepeolus remigatus (Fabr.).

Mesilla, New Mexico, June 30 (*Cockerell*).

This is the true *remigatus*, as defined by Cresson and